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Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT 510, 291

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P30989-P0	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/JP2003/005596	International filing date (*day/month/year*) 02 May 2003 (02.05.2003)	Priority date (*day/month/year*) 08 May 2002 (08.05.2002)
International Patent Classification (IPC) or national classification and IPC H04N 9/07		
Applicant MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand 20 November 2003 (20.11.2003)	Date of completion of this report 23 July 2004 (23.07.2004)
Name and mailing address of the IPEA/JP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/JP2003/005596

I. Basis of the report

1. With regard to the elements of the international application:*

☐ the international application as originally filed

☒ the description:

pages 1-25, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☒ the claims:

pages 3-10, 13, as originally filed
pages 1, 2, 11, 12, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____

☒ the drawings:

pages 1-16, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/JP 03/05596

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-9, 11-13	YES
	Claims	10	NO
Inventive step (IS)	Claims	1-9, 11-13	YES
	Claims	10	NO
Industrial applicability (IA)	Claims	1-13	YES
	Claims		NO

2. Citations and explanations

Document 1: JP 2000-197067 A (Fuji Photo Film Co., Ltd.), 14 July 2000

Claims 1-9 and 11-13

The feature of generating a luminance signal that is associated with the imaging results based upon the results from the detection of color changes and the results from the detection of changes in luminance is not disclosed or suggested in document 1 or in any of the documents that are cited in the international search report.

Claim 10

The invention that is set forth in claim 10 is disclosed in document 1 cited in the international search report; therefore, it lacks novelty and does not involve an inventive step.

AMENDMENTS TO THE CLAIMS UNDER ART. 19

1. (Amended) An image signal processing apparatus, comprising:

image capturing means of performing image capture using a plurality types of color filters which are arranged based on repetition of a pattern determined in advance;

color change detecting means of performing color change detection regarding the result of said image capture while considering said pattern;

luminance change detecting means of performing luminance change detection regarding the result of said image capture while considering said pattern; and

luminance signal generating means of performing luminance signal generation regarding the result of said image capture based on the result of said color change detection and the result of said luminance change detection.

2. (Amended) The image signal processing apparatus of claim 1, wherein said color change detection is performed with respect to a predetermined direction corresponding to said pattern, and

said luminance signal is generated such that a pseudo signal is suppressed at a color change point where said detected color change with respect to said predetermined direction

exceeds a predetermined level regarding said luminance change.

3. The image signal processing apparatus of claim 2, wherein said pattern is a pattern having two pixels in the horizontal direction and four pixels in the vertical direction so as to arrange a color filter of magenta and a color filter of green in this order on a first line in the horizontal direction, a color filter of yellow and a color filter of cyan in this order on a second line in the horizontal direction, a color filter of green and a color filter of magenta in this order on a third line in the horizontal direction and a color filter of yellow and a color filter of cyan in this order on a fourth line in the horizontal direction, and

said predetermined direction is the horizontal direction.

4. The image signal processing apparatus of claim 3, wherein said color change detection is performed in accordance with a change as for said magenta in the horizontal direction and a change as for said green in the horizontal direction.

5. The image signal processing apparatus of claim 4, wherein said color change detection is performed further in accordance with a change as for said yellow in the vertical direction and a change as for said cyan in the vertical

direction.

6. The image signal processing apparatus of claim 4, wherein said color change detection is performed further in accordance with a change as for said magenta in the vertical direction and a change as for said green in the vertical direction.

7. The image signal processing apparatus of claim 2, wherein said pattern is a pattern having two pixels in the horizontal direction and two pixels in the vertical direction so as to arrange a color filter of red and a color filter of green in this order on a first line in the horizontal direction and a color filter of green and a color filter of blue in this order on a second line in the horizontal direction, and

said predetermined direction is the direction of a diagonal line.

8. The image signal processing apparatus of claim 7, wherein said color change detection is performed in accordance with a change as for said red in the direction of the diagonal line and a change as for said blue in the direction of the diagonal line.

9. The image signal processing apparatus of claim 7,

wherein calculation for suppression of said pseudo signal is performed in accordance with a change as for said red in the direction of the diagonal line and a change as for said blue in the direction of the diagonal line.

10. An image signal processing circuit, comprising:

color change detecting means of performing color change detection regarding the result of image capture which is performed using a plurality types of color filters which are arranged based on repetition of a pattern determined in advance, while considering said pattern; and

luminance signal generating means of performing luminance signal generation regarding the result of said image capture based on the result of said color change detection.

11. (Amended) An image signal processing method, comprising:

a color change detecting step of performing color change detection regarding the result of image capture which is performed using a plurality types of color filters which are arranged based on repetition of a pattern determined in advance, while considering said pattern;

a luminance change detecting step of performing luminance change detection regarding the result of said image capture while considering said pattern; and

a luminance signal generating step of performing luminance signal generation regarding the result of said image capture based on the result of said color change detection and the result of said luminance change detection.

12. (Amended) A program which makes a computer execute the color change detecting step of performing color change detection regarding the result of image capture which is performed using a plurality types of color filters which are arranged based on repetition of a pattern determined in advance, while considering said pattern, a luminance change detecting step of performing luminance change detection regarding the result of said image capture while considering said pattern, and the luminance signal generating step of performing luminance signal generation regarding the result of said image capture based on the result of said color change detection and the result of said luminance change detection, which are of the image signal processing method of claim 11.

13. A recording medium which holds the program of claim 12 and which can be processed on a computer.